Claims

1. Process for the production of a protein with citrate lyase activity by expressing a suitable plasmid in a host organism and isolating the protein in an active form, wherein the plasmid contains the information from a gene cluster composed of at least six genes and an inducible promoter.

2. Process as claimed in claim 1, wherein the genes code for certain subunits of the protein having citrate lyase activity and/or for components that contribute to the biosynthesis of the complete enzyme.

3. Process as claimed in one of the claims 1 or 2, wherein the plasmid contains the genes citC, citD, citE, citF, citG and a DNA fragment obtainable from E. coli that is located between citF and citG on the E. coli citrate lyase gene cluster.

4. Process as claimed in claim 3, wherein the DNA fragment codes for a 20 kDa protein.

5. Process as claimed in claim 3 or 4, wherein the DNA fragment codes for a protein containing the motif G(A)-R-L-X-D-L(I)-D-V.

6. Process as claimed in one of the claims 1 to 5, wherein at least one gene is obtainable from E. coli, Haemophilus influenzae, Klebsiella pneumoniae or Leuconostoc mesenteroides.

7. Process as claimed in one of the claims 1 to 6, wherein at least four genes are derived from the microorganism that is specific for the isolated protein with citrate lyase activity.

8. Process as claimed in claim 7, wherein it is Klebsiella pneumoniae.

9. Process as claimed in one of the claims 1 to 8, wherein the host organism is a eukaryotic or prokaryotic microorganism.

10. Process as claimed in claim 9, wherein it is E. coli.

11. Process as claimed in one of the claims 1 to 10, wherein the expression occurs under aerobic conditions.

12. Recombinant soluble protein with citrate lyase activity and a molecular weight of about 14,000 to 15,000 Dalton obtainable by a process as claimed in one of the claims 1 to 11.

13. Test kit for the determination of citric acid which comprises essentially the following components

(a) a protein with citrate lyase activity obtainable according to one of the claims 1 to 11,
(b) at least one protein with hydrogen-transferring activity
(c) nicotinamide adenine dinucleotide or a corresponding derivative in a reduced form and
(d) optionally suitable stabilizers, activators and/or substances to avoid or reduce interferences, and buffer solutions.

14. Test kit as claimed in claim 13, wherein L-malate dehydrogenase and optionally L-lactate dehydrogenase are used as the hydrogen-transferring enzymes.

15. Use of the enzyme obtainable according to claims 1 to 11 to determine citric acid.

add A17